

CLAIMS

1. A ring filter element for a liquid filter, particularly for an oil filter for purifying lubricant oil, particularly for an internal combustion engine of a motor vehicle,
 - having an annularly positioned filter material (2),
 - having at least one end disk (4), which seals the filter material on its end, and which has a journal (5), which is positioned eccentrically in relation to the lengthwise central axis (3) of the ring filter element (1) and projects outward, characterized by a discharge channel (6), which penetrates the journal (5) and the associated end disk (4) radially next to the filter material (2).
2. The ring filter element according to Claim 1, characterized in that the discharge channel (6) penetrates the journal (5) centrally.
3. The ring filter element according to Claim 1 or 2, characterized in that the discharge channel (6) penetrates the journal (5) axially.
4. The ring filter element according to one of Claims 1 through 3, characterized in that the discharge channel (6) communicates with an inner chamber (7) of the ring filter element (1) encircled by filter material (2).
5. The ring filter element according to one of Claims 1 through 4, characterized in that the discharge channel

(6) communicates with a clean side of the ring filter element (1).

6. The ring filter element according to one of Claims 1 through 5, characterized in that a throttle (8) is positioned or implemented at or in an outlet end of the discharge channel (6) or upstream from the discharge channel (6).
7. The ring filter element according to Claim 6, characterized in that the discharge channel (6) forms or has a throttle (8).
8. The ring filter element according to one of Claims 1 through 7, characterized in that the ring filter element (1) is implemented as a secondary flow filter.
9. The ring filter element according to Claim 8, characterized in that the secondary flow filter is connectable at an end disk facing away from the journal (5) to a ring filter element implemented as a main flow filter in such a way that the secondary flow filter and main flow filter are removable from a filter housing (17) together.
10. The ring filter element according to one of Claims 1 through 7, characterized in that
 - the filter material (2) is implemented for filtering a secondary flow,
 - the ring filter element (1) has a further filter material (13), which is positioned annularly and coaxially to the lengthwise central axis (3) of the ring filter element (1) and axially neighboring the secondary flow filter material (2) and is implemented for filtering a main flow,

- the secondary flow filter material (2) and main flow filter material (13) have a shared middle disk (14).
11. The ring filter element according to one of Claims 8 to 10, characterized in that the discharge channel (6) is dimensioned in regard to its flow resistance in such a way that a secondary flow flowing through the secondary flow filter is limited to a predetermined volume flow or to a predetermined proportion of a total flow formed by the secondary flow and a main flow.
 12. The ring filter element according to one of Claims 1 through 11, characterized in that the ring filter element (1) has an inner frame (28) on which the filter material (2) is supported radially.
 13. The ring filter element according to one of Claims 1 through 12, characterized in that
 - the ring filter element (1) has a central tube (9),
 - an annular chamber (10) is implemented radially between the tube (9) and the filter material (2),
 - the discharge channel (6) communicates with the annular chamber (10).
 14. The ring filter element according to Claim 13, characterized in that
 - the end disk (4) equipped with the journal (5) has a central opening (12),

- the tube (9) separates a central inner chamber (11), which communicates with the central opening (12), from the annular chamber (10).
15. The ring filter element according to at least Claims 10 and 13, characterized in that
- the tube (9) extends from the end disk (4) equipped with the journal (5) up through the middle disk (14),
 - the middle disk (14) has an internal radial seal (25), which is supported radially on the tube (9) to form a seal.